

**MICROBEAM ASSEMBLY AND ASSOCIATED METHOD FOR INTEGRATED
CIRCUIT INTERCONNECTION TO SUBSTRATES**

ABSTRACT OF THE DISCLOSURE

A microbeam interconnection method is provided to connect integrated circuit bond pads to substrate contacts. Conductive leads (microbeams) are releasably formed, by a process such as electroplating or vacuum deposition, over a release layer deposited on a ceramic, glass or similar carrier. The microbeam material adheres only very weakly to the release layer. After the inner ends of the microbeams have been bonded to IC bond pads, such as by flip chip bump bonding, and the integrated circuit has been fully tested, the IC is lifted away from the carrier, causing the microbeams to peel away from the release layer. After straightening the microbeams against a flat surface, the outer ends of the microbeams may then be bonded to contacts on an MCM or other substrate. The method permits full electrical testing at speed and high speed bonding. The method significantly reduces mechanical stresses in interconnect bonds and thereby improves integrated circuit reliability.

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